

## ***ABSTRACT***

**BACKGROUND:** Diabetes mellitus is a systemic disease with several major complication affecting both the quality and length of life. Periodontal disease is considered to be sixth complication of diabetes. Type 2 diabetes is the most common form of diabetes accounting for 90-95% of all cases, usually has an adult onset. Diabetes mellitus is an extremely important disease from a periodontal standpoint.

**AIM:** The purpose of the study was to assess the prevalence and severity of periodontal disease in type 2 diabetes mellitus (DM) patients in Coimbatore city and to compare the findings with non-diabetic patients. Also a comparison was made to assess the periodontal status among well-controlled, moderately-controlled, poorly controlled diabetic patients with the possible influence of other factors such as age, sex, oral hygiene habits, personal habits, duration of diabetes, and Glycated hemoglobin as contributory risk elements for periodontal disease.

**MATERIALS AND METHODS:** The study involved 400 type 2 diabetic patients (Study Group) and 100 non diabetic patients (Control Group) among the age group of 35-75 years were included in the study. The study group was divided based on Glycated hemoglobin levels into well, moderately and poorly controlled. Relevant information regarding age, oral hygiene habits and personal habits was obtained from the patients. Oral examination was done using Community Periodontal Index (CPI) and Plaque Index (PII). The statistical analysis was calculated by using multivariate logistic regression analysis for multiple comparisons.

**RESULTS:** The mean CPI score and the number of missing teeth was higher in diabetics compared with non diabetics, and was statistically significant ( $p<0.05$ ), indicating that prevalence and extent of periodontal disease was more frequent and more severe in diabetic

patients. The risk factors like Glycated hemoglobin, duration of diabetes showed a positive correlation with periodontal destruction, according to the multiple regression analysis. The association between duration of diabetes with prevalence of periodontal disease according to CPI was 94.4% which showed a significant value ( $p < 0.05$ ) as duration of diabetes increases (i.e.  $> 10$  years). There was a positive correlation between age and prevalence of periodontal disease in diabetic patients with a statistically significant ( $p < 0.05$ ). The prevalence and severity of periodontal disease was higher in diabetic patients (61.3%) when compared with non diabetics (31.7%). The odds ratio of a diabetic showing periodontal destruction in comparison with a non diabetic was 0.259, 3.283 and 2.329 (95% CI) in well, moderately and poorly controlled diabetics, respectively.

**CONCLUSION:** The present study made an attempt to determine the association between type 2 DM and periodontal disease in Coimbatore city. It was found that type 2 diabetes mellitus subjects manifested higher prevalence and severity of periodontal disease as compared with non diabetics.

**KEY WORDS:** Type 2 Diabetes mellitus; Periodontal disease; Prevalence; Glycated Hemoglobin level.